

CONTENTS

	Page
CHAPTER I : INTRODUCTION.....	1
1.1.LOCATION AND ACCESSIBILITY.....	1
1.2.SAMPLING.....	2
1.3.METHODOLOGY.....	2
1.4.SCOPE AND AIM OF STUDY.....	4
1.5.PREVIOUS WORK.....	5
1.5.1.Classification of the Egyptian Base- ment.....	5
1.5.2.Migif-Hafafit Gneisses and Migmatites	7
1.5.3.Intrusive Rocks.....	11
1.5.4.The Basement of Sinai and Study Area	17
CHAPTER II : FIELD GEOLOGY AND STRUCTURAL SETTING.....	24
2.1.RELATIONS AND OBSERVATIONS.....	24
2.1.1.Metamorphic Rocks.....	24
2.1.2.Intrusive Rocks.....	44
2.2.STRUCTURAL SETTING.....	55
2.2.1.Major Structures.....	55
2.2.2.Minor Structures.....	59
CHAPTER III: METAMORPHIC ROCKS.....	68
3.1.SCHISTS.....	68
3.1.1.Petrography.....	68 ✓
3.1.2.Opaque Mineralogy.....	78
3.1.3.Geochemistry.....	80
3.2.AMPHIBOLITE ENCLAVES.....	86 ←
3.2.1.Petrography.....	86 ✓
3.2.2.Opaque Mineralogy.....	99

3.2.3.Geochemistry.....	107
3.3.GNEISSES.....	118
3.3.1.Petrography.....	118
3.3.2.Opaque Mineralogy.....	132
3.3.3.Geochemistry.....	139
3.4.MIGMATITES.....	149
3.4.1.Petrography.....	149
3.4.2.Opaque Mineralogy.....	170
3.4.3.Geochemistry.....	178
CHAPTER IV : INTRUSIVE ROCKS.....	184
4.1.HORNBLENDE GABBRO.....	184
4.1.1.Petrography.....	184
4.1.2.Opaque Mineralogy.....	189
4.1.3.Petrochemistry.....	194
4.2.GRANITIC ROCKS.....	205
4.2.1.Petrography.....	205
4.2.2.Opaque Mineralogy.....	224
4.2.3.Geochemistry.....	229
CHAPTER V : DISCUSSION AND CONCLUSIONS.....	244
5.1.GEOLOGIC AND PETROGRAPHIC ASPECTS.....	244
5.2.DISTRIBUTION OF OPAQUE MINERALS IN THE ROCK TYPES.....	247
5.2.1.Metamorphic rocks.....	248
5.2.2.Granitoids.....	251
5.2.3.Hornblende gabbro.....	254
5.3.GEOCHEMICAL CHARACTERISTICS OF GNEISSES AND GRANITOIDS.....	255

5.4.PETROGENESIS AND TECTONIC SETTING.....	261
5.4.1.Metamorphic rocks.....	261
5.4.2.Hornblende gabbro.....	264
5.4.3.Granitoids.....	264
REFERENCES.....	268
ARABIC SUMMARY.....	